Molecular Biology Reports **14:** 277–282, 1990

CONTENTS Volume 14 1990

Volume 14 No.1

Scherrer K.: Prosomes, subcomplexes of untranslated mRNP 1
Vlassov V.V., Kobetz N.D., Chernolovskaya E.L., Demidova S.G., Borissov R.G. & Ivanova E.M.: Sequence-specific chemical modification of chromatin DNA with reactive derivatives of oligonucleotides 11
Meyerhof W., Stalder J., Köster M., Wirthmüller U. & Knöchel W.: Sequence analysis of the upstream regions of Xenopus laevis b-globin genes and arrangement of repetitive elements within the globin gene clusters 17
Frachet P., Uzan G., Thevenon D., Denarier E., Prandini M.H. & Marguerie G.: GPIIb and GPIIIa amino acid sequences deduced from human megakaryocyte cDNAs 27
Coderoni S., Paparelli M. & Gianfranceschi G.I.: Role of calf thymus DNA-Topoisomerase I phosphorylation on relaxation activity expression and on DNA-protein interaction. Role of DNA-Topoisomerase I phosphorylation 35

Volume 14 Nos. 2/3

Special Issue: Structure and Function of Eukaryotic RNP
Guest Editors: A Guialis, I.W. Mattaj, C. Sekeris and W.J. van Venrooij

Preface 41

Session 1a: Ro and La RNPs
Pruijn G. J. M., Slobbe, R. L. & Venrooij, W. J. van: Structure and function of LA and RO RNPs 43
Bachman M., Falke D. & Müller W. E. G.: Is La protein involved in autoimmunization and inflammatory events during disease? Characterization of La protein as an unwinding enzyme 49
Moreau, G., Lin, N., Stutz, F. & Clarkson, S.: Functional analyses of the xenopus La protein 51
Chan, E. K. L., Hamel, J. C., Peebles, C. L., Buyon, J. P. & Tan, E. M.: Molecular characterization and cloning of the 52kDa Ss-A/Ro protein 53
Slobbe, R. L., Pruijn, G. J. M. & Venrooij, W. J. van: Analysis of the molecular composition of Ro ribonucleoprotein particles 55
Moor, C. H. de, Heugten, H. A. A. van & Voorma, H. O.: Characterization of messenger ribonucleoprotein particles 57
Hentze, M. W., Goossen, B. & Caughman, S. W.: Complex formation between a cytoplasmic protein and the ferritin mRNA regulates translation initiation 61
Heugten, H. A. A. van & Voorma, H. O.: The Met-tRNA binding factor eIF-2 coordinates the mRNA recognition by cap binding proteins 63

Session 1b: Other cytoplasmic RNPs
Minich, W. B., Volyanik, E. V., Korneyeva, N. L., Berezin, Y. V. & Ovchinnikov, L. P.: Cytoplasmic mRNP proteins affect mRNA translation 65
Murray, M. T., Krohne, G. & Franke, W. W.: Cytoplasmic pools of soluble mRNA binding proteins and particles in *Xenopus laevis* early development 69
Römisch, K., Ribes, V., High, S., Lütcke, H., Tollervey, D. & Dobberstein, B.: Structure and function of signal recognition particle (SRP) 71
Sachs, A & Davis, R.: The poly(a)-binding protein is required for translation initiation and poly(A) tail shortening 73
Scherrer, K., Nothwang, H-G., Pereira, I. S., Bey, F., Olink-Coux, M. Huesca, M., Coux, O., Arcangeletti, C., Chezzi, C., Buri, J-F., Grossi de Sa, M-F., Pal, J. K., Akhayat, O. & Martins de Sa, C.: The prosomes: Molecular and cellular biology 75

Schwemmle, M., Schickinger, J., Bader, M., Sarre, Th. F. & Hilse K.: A 60 kDa protein from rabbit reticulocytes binds specifically to (part of) the leader sequence of b-globin mRNA in a cap dependent manner 77

Session 2:HnRNPs

Swanson, M. S.: Heterogeneous nuclear ribonucleoprotein complexes 79
Buvoli, M., Cobianchi, F., Bestagno, M., Bassi, M. T., Biamonti, G. & Riva, S.: A second A1-type protein is encoded by the human hnRNP A1 gene 83
Piñol-Roma, S., Swanson, M., Görlach, M., Burd, C., Matunis, M., Matunis, E., Michael M. & Dreyfuss G.: Recent studies on hnRNP complexes 85
Ghetti, A., Bolognesi, M., Cobianchi, A. & Morandi, C.: Modelling by homology of RNA binding domain 87
Ghetti, A., Padovani, C., Gamberi, C., Bestagno, M. & Morandi, C.: Identification of a 55 Kdal nuclear protein sharing homology with hnRNP type L. 89
Guialis, A., Moraitou, M., Patrinou-Georgoula, M., Dangli, A. & Sekeris C. E.: Isolation of an endogenous 40S multi-snRNP complex containing U1, U2, U4, U5, U6 snRNPS and a set of 50-210 MKD proteins 91
Haynes, S. R., Raychaudhuri, G., Johnson, D., Amero, S. & Beyer, A. L.: The *Drosophila Hrb* loci: A family of hnRNA binding proteins 93
Wurtz, T., Lönnroth, A. & Daneholt, B.: Biochemical characterization of Balbiani ring premessenger RNP particles 95

Session 3: New RNPs – Nucleolar RNPs

Craft, J. & Gold, H.: New RNPs of higher eukaryotes 97
Tollervey, D. & Hurt, E. C.: The role of small nucleolar ribonucleoproteins in ribosome synthesis 103
Caizergues-Ferrer, M., Mathieu, C., Mariottini, P., Amalric, F. & Amaldi, F.: Fibrillarin and U3 RNA expression during Xenopus oogenesis and embryo development 107
Craft, P. J. & Gold, H.: The th ribonucleoprotein particle: association with the RNA processing enzymes RNase MRP and RNase 109
Fragapane, P., Caffarelli, E., Santoro, B., Sperandio, S., Lener, M. & Bozzoni, I.: Splicing control of the L1 ribosomal protein gene of *X.laevis*: structural similarities between sequences present in the *regulatory intron and in the 28S ribosomal RNA* 111
Ghisolfi, L., Joseph, G., Erard, M., Escoubas, J-M., Mathieu, C. & Amalric, F.: Nucleolin - pre-rRNA *interactions and preribosome assembly* 113
Hirsch, D. & Huang, X.-Y.: Trans-splicing and SL RNAs in *C.elegans* 115
Konstantinova, I. M., Kulitchkova, V. A., Petukhova, O. A., Turoverova, L. V., Volkova, I. V. & Vorob'ev, V. I.: Small nuclear RNP tightly bound to chromatin is possibly involved in hormonal regulation of gene expression 117
Lempicki, R. A., Jarmolowski, A., Huang, G., Li, H. V. & Fournier, M. J.: Mutations in conserved domains of U14 RNA impair 18S ribosomal RNA production in *Saccharomyces cerevisiae* 119
Kedersha, N. L. & Rome, L. H.: Vaults: large cytoplasmic RNP's that associate with cytoskeletal elements 121
Steitz, J. A., Bruzik, J. P., Tyc, K., Kass, S. & Sollner-Webb, B.: Molecular analyses of the functions of SL and U3 snRNPs 123

Session 4: Yeast and plant NRPs

Filipowicz, W., Kiss, T., Marshallsay, C. & Waibel, F.: U-snRNA genes, U-snRNAs and U-snRNPs of higher plants 125
Ares, M. Jr. & Igel, A. H.: Mutations define esential and nonessential U2 RNA structures 131
Cross, M., Palfi, Z., Günzl, A. & Bindereif, A.: Characterisation of small nuclear RNPs in T.brucei 133
Fabrizio, P. & Abelson, J.: Point mutations in yeast U6 snRNA can specifically block the first or second step of pre-mRNA splicing *in vitro* 135
Goodall, G., Levy, J., Mieszczak, M. & Filipowicz, W.: Plant RNA-binding proteins 137
Guthrie, C., Shannon, K. & Bordonne, R.: Genetic dissection of the U4/U6/U5 snRNP "cycle" in yeast 139
Jamieson, D. J., Whittaker, E., King, D., Anderson, G. J. & Beggs, J. D.: Protein interactions in nuclear pre-mRNA splicing in *Saccharomyces cerevisiae* 141
Liao, X., Kretzner, L., Seraphin, B. & Rosbash, M.: Contribution of U1 snRNA structural domains to U1 snRNP function 143

Solymosy, F.: Are UsnRNA sequence variants involved in developmentally controlled, tissuespecific and/or alternative splicing of pre-mRNA at the level of RNA-protein interaction? Some hints from studies of plant systems 145
Vaux, P., Leader, D. J., Waugh, R. & Brown, J. W. S.: Plant UsnRNA genes 147
Waibel, F. & Filipowicz, W.: The spacing between two promoter elements determines RNA polymerase specificity during transcription of U small nuclear RNA genes of *Arabidopsis* 149

Session 5: RNA-protein interactions in nucleoplasmic RNPs – Genes encoding RNA components
Mattaj, I. W.: A selective review of RNA-protein interactions in eukaryotes 151
Andersen, J., Feeney, R. J. & Zieve, G. W.: Cytoplasmic assembly of snRNP core proteins from 6S and 20S snRNA-free intermediates and nuclear exchange of the U1 and U2 snRNP specific proteins 157
Boelens, W. C., Scherly, D., Mattaj, I. W. & Venrooij, W. J. van: Analysis of the in vitro binding of A and B† snRNP proteins to U1 and U2 snRNAs using mutated A and B† proteins 159
Dahlberg, J. E., Yang, H., Neuman de Vevarg, H. & Lund, E.: Formation of the 3' end of U1 snRNA 161
Harper, D. S., Fresco, L. D. & Keene, J. D.: Characterization of a *Drosophila* U snRNP RNA-binding *protein* 163
Heinrichs, V., Bach, M. & Lührmann, R.: U1-Specific protein C is required for efficient complex formation *of U1 snRNP with a 5'splice site* 165
Hernandez, N., Lobo, S., Lister, J., Ifill, S., Ratnasabapathy, R., Sheldon, M. & Johal, L.: Transcription of *the human U2 and U6 RNA genes* 167
Hoch, S. O., Haselby, J. A., Jannatipour, M., Ryder, M. & Rokeach, L. A.: Identification of immunoreactive *domains of the snRNP polypeptides Sm-Bó/B and Sm-D* 169
Kastner, B., Bach, M. & Lührmann, R.: Electron microscopy of snRNPs U2, U4/6 and U5: Evidence for a *common structure-determining principle in the major UsnRNP family* 171
Kelekar, A. & Keene, J. D.: Downregulation of RNA polymerase III transcription of the hY3 gene in vitro 173
Lehmeier, T., Foulaki, K. and Lührmann, R.: Identification and characterization of novel sm-autoantigens associated with the major snRNPs U1, U2, U4/U6 and U5 175
Patton, J. R.: *In vitro* assembly of mutant U5 snRNAs 177
Pederson, T. & Kleinschmidt, A.: U2 RNA processing and snRNP assembly studied *in vitro* by RNA transfection 179
Scherly, D., Boelens, W.,Dathan, N. A., Kambach, C., Venrooij, W. J. van & Mattaj, I. W.: Binding specificity determinants of U1A and U2B† proteins 181

Session 6: Functional aspects of nuclear RNPs
Lührmann, R.: Functions of U-snRNPs 183
Ast, G., Offen, D., Goldblatt, D., Sperling, R. & Sperling, J.: Identification of nuclear RNP proteins as pre- mRNA splicing factors 193
Behrens, S.-E. & Lührmann, R.: Immuno affinity purification and characterization of a stable *U4/U5/U6* multip-snRNP complex from hela nuclear extracts 195
Bienroth, S., Christofori, G., Lang, K. M., Wahle, E. & Keller, W.: Components involved in 3ó processing of precursors to polyadenylated messenger RNA 197
Krämer, A., Utanis, U., Keller, W. & Lamond, A.: Components involved in nuclear pre-mRNA splicing 199
Lamond, A. I., Barabino, S., Blencowe, B. J., Sproat, B. & Ryder, U.: Studying pre-mRNA splicing using antisense 2-ome RNA oligonucleotides 201
Nordqvist, K., Zerivitz, K., Kreivi, J.-P., Öhman, K. & Akusjärvi, G.: Characterization of factors involved in regulated adenovirus-2 major late pre-mRNA splicing 203
Schümperli, D., Albrecht, U., Koning, T. W., Melin, L., Soldati, D., Stauber, C. & Lührmann, R.: Biochemical studies of U7 snRNPs and of histone RNA 3' processing 205
Thalmann, E., Blaas, D. & Kuechler, E.: Affinity chromatography of hela splicing extracts on m^7 GTP-sepharose and photo-affinity-labeling of cap-binding proteins with g-[(4-benzoyl phenyl) methylamido]-7-methyl-guanosine-5ó-triphosphate 207
Vankan, P., Hamm, J., Dathan, N. A. & Mattaj, I. W.: Structure-function in xenopus snRNPs 209
Vasserot, A. P., Hoffmann, I., Tabiti, K. & Birnstiel, M. L.: 3ó Processing of histone RNA precursors 211
Steitz, T. A., Rould, M. A. & Perona, J. J.: Structural basis of tRNA discrimination as derived from the high resolution crystal structure of glutaminyl-tRNA synthetase complexed with $tRNA^{Gln}$ and ATP 213

Volume 14 No. 4

Sarkari J.F. & Mahajan S.K.: Detection of free cytoplasmic circles of transposon Tn*9* multimers in *Escherichia coli* 223
Stefanovsky V., Dimitrov S., Russanova V. & Pashev I.: Histones H1 and H4 are present near the replication fork 231
Magnaldo T., Pommes L., Asselineau D. & Darmon M.: Isolation of a GC-rich cDNA identifying mRNA present in human epidermis and modulated by calcium and retinoic acid in cultured keratinocytes. Homology with murine loricrin mRNA 237
Podust V.N., Korobeinicheva T.O., Nevinsky G.A., Levina A.S. & Lavrik O.I.: Inactivation of DNA polymerases by adenosine 2ó,3ó-riboepoxide 5ó-triphosphate allows estimation of the primers affinity 247
Singh A., Singh S. & Kanungo M.S.: Conformation and expression of the albumin gene of young and old rats 251
Coderoni S., Paparelli M. & Gianfranceschi G.L.: Optimum DNA relaxation reaction conditions for calf thymys DNA-Topoisomerase I are determined by specific enzyme features 255
Kaur J. & Thakur M.K.: Effect of post-synthetic modifications of proteins on the binding of estrogen-receptor complex to uterine nuclei of aging rats 261
van de Ven W.J.M., Voorberg J., Fontijn R., Pannekoek H., van den Ouweland A.M.W., van Duijnhoven H.L.P., Roebroek A.J.M. & Siezen R.J.: Furin is a subtilisin-like proprotein processing enzyme in higher eukaryotes 265
Volume contents/Author index 277